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Serial No.: 09/518,156

Confirmation No.: 4178

Filed: March 2, 2000

For: PROPHYLACTIC AND THERAPEUTIC IMMUNIZATION AGAINST PROTOZOAN INFECTION AND  
DISEASE**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application. Please cancel claims 1-39, 41, 45, 47, 51, 56 and 70-73.

1-39. (Canceled)

40. (Currently amended) A method for therapeutic immunization of a mammal harboring a persistent protozoan *Trypanosoma* infection comprising;

administering to the infected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

(a) an immunogenic polypeptide and

(b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide;

wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and wherein administration of the vaccine is effective to eliminate the parasite from the mammal.

41. (Canceled)

42. (Currently amended) The method of claim [[41]] 40 wherein the protozoan *Trypanosoma* is *T. cruzi*.

43. (Original) The method of claim 40 wherein the vaccine stimulates a CD8<sup>+</sup> T cell response.

44. (Previously presented) The method of claim 40 wherein the multicomponent vaccine

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comprises a plurality of polynucleotides comprising a nucleotide coding region encoding an immunogenic polypeptide, and at least one polynucleotide comprising a nucleotide coding region encoding a cytokine.

45. (Canceled)

46. (Currently amended) A method for therapeutic immunization of mammal harboring a persistent protozoan *Trypanosoma* infection comprising:

administering to the infected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

(a) an immunogenic polypeptide and

(b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide;

wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and wherein administration of the vaccine is effective to prevent or delay chronic debilitating disease in the mammal.

47. (Canceled)

48. (Currently amended) The method of claim [[47]] 46 wherein the protozoan *Trypanosoma* is *T. cruzi*.49. (Original) The method of claim 46 wherin the vaccine stimulates a CD8<sup>+</sup> T cell response.

50. (Previously presented) The method of claim 46 wherein the multicomponent vaccine

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comprises a plurality of polynucleotides comprising a nucleotide coding region encoding an immunogenic polypeptide and at least one polynucleotide comprising a nucleotide coding region encoding a cytokine.

51. (Canceled)

52. (Currently amended) A method for therapeutic immunization of a mammal harboring a persistent protozoan *Trypanosoma* infection comprising:

administering to the infected mammal a vaccine comprising at least one component selected from the group consisting of

- (a) an immunogenic polypeptide and
- (b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide,

wherein the vaccine stimulates an antibody response, a Th1-biased CD4<sup>+</sup> T cell response and a CD8<sup>+</sup> T cell response against the protozoan *Trypanosoma* upon administration to a mammal; wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and [[,]] wherein administration of the vaccine is effective to eliminate the parasite from the mammal.

53. (Currently amended) A method for therapeutic immunization of mammal harboring a persistent protozoan *Trypanosoma* infection comprising:

administering to the infected mammal a vaccine comprising at least one component selected from the group consisting of

- (a) an immunogenic polypeptide and
- (b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide,

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wherein the vaccine stimulates an antibody response, a Th1-biased CD4<sup>+</sup> T cell response and a CD8<sup>+</sup> T cell response against the protozoan *Trypanosoma* upon administration to a mammal; wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and wherein administration of the vaccine is effective to prevent or delay chronic debilitating disease in the mammal.

54. (Currently amended) A method for prophylactic immunization of a mammal against an infectious protozoan *Trypanosoma* comprising:

administering to an uninfected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

- (a) an immunogenic polypeptide and
- (b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide;

wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and wherein administration of the vaccine is effective to prevent subsequent infection of the mammal by the protozoan *Trypanosoma*.

55. (Currently amended) A method for prophylactic immunization of a mammal against an infectious protozoan *Trypanosoma* comprising:

administering to an uninfected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

- (a) an immunogenic polypeptide and
- (b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide;

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wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; wherein administration of the vaccine is effective to prevent the development of chronic debilitating disease the mammal after subsequent infection by the protozoan *Trypanosoma*.

56. (Canceled)

57. (Currently amended) The method of claim [[56]] 55 wherein the protozoan *Trypanosoma* is *T. cruzi*.58. (Original) The method of claim 55 wherein the vaccine stimulates a CD8<sup>+</sup> T cell response.

59. (Previously presented) The method of claim 55 wherein the multicomponent vaccine comprises a plurality of polynucleotides comprising a nucleotide coding region encoding an immunogenic polypeptide and at least one polynucleotide comprising a nucleotide coding region encoding a cytokine.

60. (Previously presented) The method of claim 55 wherein the multicomponent vaccine comprises a plurality of immunogenic polypeptides wherein the immunogenic polypeptide comprises a membrane translocating sequence.

61. (Currently amended) A method for prophylactic immunization of a mammal against an infectious protozoan *Trypanosoma* comprising:

administering to an uninfected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

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- 
- (a) an immunogenic polypeptide and
  - (b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide;

wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; wherein administration of the vaccine is effective to prevent the death of the mammal after subsequent infection by the protozoan *Trypanosoma*.

62. (Currently amended) A method for prophylactic immunization of a mammal against an infectious protozoan *Trypanosoma* comprising;

administering to an uninfected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

- (a) an immunogenic polypeptide and
- (b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide;

wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and wherein administration of the vaccine is effective to prevent subsequent infection of the mammal by the protozoan *Trypanosoma*.

63. (Currently amended) A method for prophylactic immunization of a mammal against an infectious protozoan *Trypanosoma* comprising;

administering to an uninfected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

- (a) an immunogenic polypeptide and
- (b) a polynucleotide comprising a nucleotide coding region encoding an

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immunogenic polypeptide;

wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and wherein administration of the vaccine is effective to prevent the development of chronic debilitating disease the mammal after subsequent infection by the protozoan *Trypanosoma*.

64. (Currently amended) A method for prophylactic immunization of a mammal against an infectious protozoan *Trypanosoma* comprising:

administering to an uninfected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

(a) an immunogenic polypeptide and

(b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic polypeptide;

wherein the immunogenic polypeptide comprises a protozoan *Trypanosoma* polypeptide that is associated with a protozoan cell surface or secreted by a protozoan comprising a glycosylphosphatidylinositol anchor attachment site, or an immunogenic fragment of said polypeptide; and wherein administration of the vaccine is effective to prevent the death of the mammal after subsequent infection by the protozoan *Trypanosoma*

65. (Previously presented) A method for therapeutic immunization of a mammal harboring a persistent *T. cruzi* infection comprising:

administering to the infected mammal a multicomponent vaccine comprising a plurality of components selected from the group consisting of

(a) an immunogenic *T. cruzi* polypeptide and(b) a polynucleotide comprising a nucleotide coding region encoding an immunogenic *T. cruzi* polypeptide.

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wherein administration of the vaccine is effective to prevent or delay chronic debilitating disease in the mammal.

66. (Previously presented) The method of claim 65 wherein the multicomponent vaccine comprises a plurality of polynucleotides comprising a nucleotide coding region encoding an immunogenic *T. cruzi* polypeptide and at least one polynucleotide comprising a nucleotide coding region encoding a cytokine.

67. (Original) The method of claim 65 wherein administration of the multicomponent vaccine stimulates an antibody response, a Th1-biased CD4<sup>+</sup> T cell response and a CD8<sup>+</sup> T cell response in the mammal.

68. (Previously presented) The method of claim 65 wherein the multicomponent vaccine comprises a plurality of immunogenic *T. cruzi* polypeptides, and wherein the immunogenic polypeptide comprises a membrane translocating sequence.

69. (Original) The method of claim 65 wherein the mammal is a dog, a cat, or a human.

70-73. (Canceled)